

CLAIMS

1. A solar tile assembly comprising a removable outer panel (1) that comprises photovoltaic means (3) and a first electrical connector (19a), and an inner support structure (2) that comprises a second electrical connector (13), the arrangement being such that in use an electrical connection between the first electrical connector (19a) and the second electrical connector (13) is achieved by bringing together the outer panel (1) and the inner support structure (2).
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2. A solar tile assembly as claimed in claim 1, wherein the electrical connection between the first electrical connector and the second electrical connector is broken by the removal of the outer panel from the inner support structure.
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3. A solar tile assembly as claimed in claim 1 or claim 2, wherein the outer panel is slidably attached to the inner support structure by attachment means comprising a channel section (10) formed to receive an attachment element (17a, 17b).
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4. A solar tile assembly as claimed in claim 3, wherein the outer panel (2) comprises the attachment element (17a, 17b) and the inner support structure is formed with the channel (10) for receiving and retaining the attachment element of the outer panel.
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5. A solar tile assembly as claimed in claim 3, wherein the outer panel comprises a pair of attachment elements (17a, 17b) and the inner support structure is formed with a pair of channels (10) for receiving and retaining the attachment elements of the outer panel.

6. A solar tile assembly as claimed in claim 1, wherein the electrical connection between the first electrical connector and the second electrical connector is broken by sliding the outer panel in a direction that is substantially parallel to plane of outermost surface of the outer panel.
- 5 7. A solar tile assembly as claimed in any one of claims 1 to 6, wherein the outer panel is removed from the inner support structure by first sliding the outer panel in a direction that is substantially parallel to plane of the outermost surface of the outer panel and then lifting the outer panel in a direction perpendicular to the direction of the slide
10 direction.
8. A solar tile assembly as claimed in any one of the preceding claims, wherein, in use, the inner support structure can be attached to the outer surface of a structure such as a building or attached to an independent support structure inside or outside a building.
- 15 9. A solar tile assembly as claimed in any one of the preceding claims, wherein the inner support structure comprises an electrical junction box (7) that comprises the second electrical connector (13).
10. A solar tile assembly as claimed in claim 9, wherein the electrical junction box of the inner support structure comprises an electrical input terminal (15) and an electrical output terminal (14), the arrangement
20 being such that the electrical input terminal and the electrical output terminal provide electrical communication between corresponding solar tile assemblies.
11. A solar tile assembly as claimed in claim 9 or claim 10, wherein
25 the outer panel comprises an electrical junction box formed with the first electrical connector, the arrangement being such that in the assembled

state of the solar tile assembly the first connector and the second connector provide electrical communication between the two electrical junction boxes.

12. A solar tile assembly as claimed in any one of the preceding
5 claims, wherein the support structure comprises means (16) for providing
electrical connections between adjacent solar tile assemblies.

13. A solar tile assembly as claimed in claim 12, wherein the means
for providing electrical connections between adjacent solar tile
assemblies comprises an electrical connector (16) on opposite sides of the
10 support structure.

14. A removable solar tile comprising photovoltaic means (3) and an
electrical connector (19a), the arrangement being such that in use an
electrical connection between the electrical connector of the removable
solar tile and a second electrical connector (13) of an inner support
15 structure (12) is achieved by bringing together the outer panel and the
inner support structure.

15. An inner support structure for a removable tile that comprises
photovoltaic means, the inner support structure comprising an electrical
connector (13), the arrangement being such that in use an electrical
20 connection between the electrical connector (13) of the inner support
structure and an electrical connector (19a) of the removable tile (1) is
achieved by bringing together the removable tile and the inner support
structure.

16. A method for providing an electrical connection for a solar tile
25 assembly comprising a removable outer panel (1) that comprises
photovoltaic means (3) and a first electrical connector (19a), and an inner

support structure (2) that comprises a second electrical connector (13),
the method comprising sliding the outer panel towards the inner support
structure in a direction substantially parallel to the plane of the outer
panel until the first electrical connector (19a) contacts the second
5 electrical connector (13).